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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,456	10/31/2003	David Champion	100200584-1	9588

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

ONEILL, KARIE AMBER

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/699,456	<b>Applicant(s)</b> CHAMPION ET AL.	
	<b>Examiner</b> Karie O'Neill	<b>Art Unit</b> 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20, 48 and 49 is/are pending in the application.
- 4a) Of the above claim(s) 21-47 and 50-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 and 48-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-31-03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-20 and 48-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al. (US 2005/0053826 A1).

With respect to Claims 1-4 and 49, Wang et al. discloses, a fuel cell comprising: a substrate, wherein the substrate is an electrolyte made of a polymer proton exchange membrane (PEM) (paragraphs 0083 and 0086); and a platinum alloy thin film catalyst deposited onto carbon nanotubes which directly contact the PEM substrate (paragraphs 0082 and 0083); wherein the plurality of nanotubes enhances catalytic activity and conductivity of the film and increases the number of sites per unit volume where catalysis takes place (paragraphs 0018 and 0035).

With respect to Claims 5-14, Wang et al. discloses in an other embodiment, the fuel cell of Claim 1 wherein the substrate is at least one of a current collector material made of one or more carbon fibers, a porous carbon substrate, and a porous electrode sheet (paragraph 0021), the plurality of nanowires is formed from carbon nanoparticles seeded with one or more catalysts from the group consisting of platinum, nickel, copper and alloys thereof (paragraphs 0018 and 0057) and wherein the film comprises an anode and a cathode which is disclosed in paragraph 0019 as stating the invention provides an electrode/membrane combination comprising a first fuel cell conductive electrode (anode) comprising a first catalyst and a second fuel cell conductive electrode (cathode) comprising a second catalyst, where the first and second catalysts are independently selected and can comprise the same or different nanoparticles and/or thin films. Wang et al. discloses in paragraphs 0038-0039, the anode and cathode materials being fabricated from platinum and ruthenium which are metallic components contained within the nanowires. Claims 7 and 8 are considered optional and are considered to be anticipated by applied reference.

With respect to Claims 15-19, Wang et al. discloses the plurality of nanowires being randomly oriented throughout the film (Figure 1) wherein the plurality of nanowires have a length less than about 200  $\mu\text{m}$  and a diameter of about 10 to 100 nm (paragraph 0018).

With respect to Claims 20 and 48, Wang et al. discloses in paragraph 0091, an electronic device comprising a load and the fuel cell of Claim 1 being operatively

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connected to the load or device such as electric vehicles, computers, cell phones, home electrical power generation systems and the like.

### ***Conclusion***

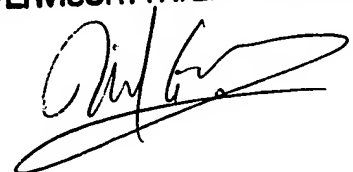
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KAO

**MICHAEL BARR  
SUPERVISORY PATENT EXAMINER**

A handwritten signature in black ink, appearing to read 'Michael Barr', is written over the printed name and title.